

THE EFFECT OF OXIDATIVE AGING TO CHARACTERISTIC PROPERTIES OF SEMI-OPEN AC WITH BLAST FURNACED SLAG AND TO PENETRATION AND SOFTENING POINT OF RECOVERED BITUMEN

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ABSTRACT

Aging of asphalt mixtures occurs during mixing, transport, laying and compaction and continues throughout the service life of the pavement. Several laboratory aging methods have been developed in order to examine the effect of aging to the properties of asphalt mixtures. This study examines the effect of oxidative aging to characteristic properties of a semi-open asphalt concrete with blast furnace slag aggregate using three types of bitumen. The bitumens used were a 35/50, a 50/70 penetration grade bitumens and an SBS modified bitumen. Short and long-term oxidative aging of the three resulted asphalt concrete mixtures has been carried out on loose mixtures. The mixtures characteristic properties examined were: stiffness, indirect tensile strength and indirect tensile strength ratio. Penetration and softening point were also determined before and after oxidative aging. Results showed that oxidative aging had lesser effect on the characteristic properties of the AC mixture with the SBS bitumen. The water sensitivity of the mixtures was not affected by oxidative aging in all cases. Oxidative aging had lesser effect on penetration and softening point of the SBS modified bitumen in comparison with the other two types of bitumen.